

Date: Jan. 23, 2012

To: Environmental Quality Commission

From: Dick Pedersen, Director

Subject: Agenda item E, Informational item: Reedsport Ocean Power Technologies wave energy park update
Feb. 16-17, 2012, EQC meeting

Purpose of item The purpose of this agenda item is to provide an update on the proposed Reedsport Ocean Power Technologies wave energy park.

Why this is important Wave energy is an emerging field, and DEQ will be involved with federal permitting elements of any proposed wave energy development project in Oregon.

Background In 2004, the Electric Power Research Institute, a non-profit organization that conducts research relating to the generation, delivery and use of electricity for the benefit of the public, issued a series of reports identifying and studying locations off the Oregon coast that would be suitable for wave energy development. To evaluate potential locations, the institute considered wave characteristics, coastal utility grid locations and capacity, and the availability of regional shipyard labor and service vessels.

The Electric Power Research Institute identified Reedsport as one of several sites with potential for wave energy development. Ocean Power Technologies obtained a preliminary permit from the Federal Energy Regulatory Commission to secure rights for wave energy development in Reedsport. The preliminary permit allowed Ocean Power Technologies to conduct studies for a proposed wave energy park while maintaining "first in line" status for license application for the site.

In early 2010, Ocean Power Technologies filed an application for a 35-year license from FERC to construct and operate a wave energy park. The company plans to install ten buoys, or wave energy converters, in the Pacific Ocean approximately 2.5 miles off the coast of Douglas County, Oregon. The project boundary will encompass an area 800 by 800 meters, equaling 0.25 square miles, where the water depth is approximately 165 to 225 feet. The actual footprint of the wave park is about 300 by 400 meters. The project will include an approximately three mile-long subsea transmission cable, which will transition to an

underground cable on land. The cable will continue to the interconnection point with the existing Douglas Electric Cooperative transmission cable. The 10 wave energy converters are expected to have a maximum output of 1.5 megawatts, which is enough electricity for about 375 homes.

The installation of ten wave energy converters is part of a three-phase development approach for the company. Ocean Power Technologies plans to install one test buoy, or wave energy converter, followed by nine additional wave energy converters if the test is successful. These first 10 converters will provide some power, and will allow the company to collect data to evaluate the potential for commercial-scale wave energy parks. The company has expressed an interest in expanding the Reedsport park to 100 wave energy converters that will generate 50 megawatts.

**DEQ
involvement**

Under Section 401 of the Clean Water Act, applicants for certain federal water-related permits or licenses must obtain state certification that the activities will not violate water quality standards or laws. Because the proposed Reedsport wave energy park requires a federal permit, and installation and operation of the buoys may result in discharges to Oregon's waters, the company needs a 401 certification from DEQ.

To issue a 401 certification, DEQ evaluates the application and develops a findings report. DEQ evaluated the wave energy park project for compliance with water quality standards, which include water usage, and other numeric and narrative criteria. Uses for the area from the Umpqua River estuary to head of tidewater and adjacent marine waters in the Umpqua basin for the Reedsport project include habitat for fish and aquatic life, fishing, boating and commercial navigation. DEQ also evaluated numeric criteria for pH, dissolved oxygen, turbidity and copper, and narrative criteria to assess the project's habitat suitability, fungal growth and potential creation of oily sheens.

DEQ's proposed conditions for the certification require the company to monitor turbidity when installing converters and transmission cables. Ocean Power Technologies will also monitor water quality and build-up of bio-fouling debris on the seabed.

**Public
involvement**

DEQ held a public comment period Oct. 11 to Nov. 14, 2011, for the proposed 401 certification and its draft conditions, and also held a public hearing in Reedsport Oct. 25, 2011. About fifteen people attended the hearing. Only one comment was recorded at the hearing, and several comments were submitted via email.

Next steps

After considering the public comments, DEQ determined that the

proposed project will comply with water quality standards and other applicable state laws and issued the 401 certification Dec. 2, 2011.

Ocean Power Technologies plans to install one test buoy in summer 2012. Installation of the nine additional wave energy converters will follow, although the company has not determined the schedule.

DEQ will participate in an aquatic resources and water quality committee overseeing the operation of the wave energy park, and also will review results of water quality and seabed monitoring. The committee includes representatives of three federal agencies, five state agencies and three non-governmental organizations. The committee will review studies addressing sedimentation, acoustics and electromagnetic fields as well as water quality.

Attachments

- A. Clean Water Act Section 401 water quality certification
- B. List of members of aquatic resources and water quality committee

Approved:

Division: _____

Section: _____

Report prepared by: Marilyn Fonseca
Phone: 503-229-6804

Clean Water Act § 401 Certification Conditions

for the Reedsport OPT Wave Park

(FERC No. 12713)

Marine Waters off the Umpqua Basin

Douglas County, Oregon

Upon Federal Energy Regulatory Commission (FERC) issuance of a new license for the Reedsport OPT Wave Park (Project), Reedsport OPT Wave Park, LLC (Licensee) shall comply with the following § 401 Certification Conditions:

1. Water Quality Sampling

Licensee shall collect vertical profiles of water quality in the water column as described in the Fish and Invertebrate Study Plan in the Reedsport OPT Wave Park Settlement Agreement, dated July 28, 2010 (Settlement Agreement).

2. Fungi or other growths

- (a) Licensee shall monitor the seabed as described in the Fish and Invertebrate Study Plan in the Settlement Agreement.
- (b) Licensee shall consult with the aquatics resources and water quality implementation committee as described in the Settlement Agreement, if biofouling debris is accumulating on the seabed.

3. Turbidity

Licensee shall monitor turbidity as described in the Fish and Invertebrate Study Plan in the Settlement Agreement.

4. Biological Criteria

- (a) Licensee shall implement the Wave, Current and Sediment Transport Plan as described in the Settlement Agreement.
- (b) If significant shoreline changes are observed, the additional steps or monitoring must be evaluated through the Settlement Agreement's adaptive management process.
- (c) Licensee shall implement the EMF effects study plan as described in the Settlement Agreement.
- (d) Licensee shall implement the acoustic emissions characterization study plan described in the Settlement Agreement.

5. Oily sheens

- (a) Licensee shall hire only licensed, insured operators who have their own spill response plan.

- (b) Licensee shall implement the Spill Prevention, Control and Countermeasures Plan (SPCC Plan) for this Project, as described in Appendix F to the FERC license application.
- (c) Licensee shall modify the proposed SPCC Plan to identify any hazardous fluids that would be used in the underwater substation pod and describe monitoring methods that would be used to identify any leaks of hazardous fluids.
- (d) In the event of a spill or release or threatened spill or release to state waters, Licensee shall implement the SPCC Plan, or other applicable contingency plan, and notify the Oregon Emergency Response System (OERS) at 1-800-452-0311.

6. pH

Licensee shall ensure that cast-in-place concrete or poured cement or grout is cured for a minimum of 24-hours prior to contact with waters of the state. Pouring of uncured cement must be done in isolation from waters and with complete containment of any water contacting uncured cement.

7. Toxic pollutants

- (a) Licensee shall use only Ameron's ABC3 Antifouling paint, or . Changes to the antifouling paint can only be made after consultation with DEQ.
- (b) If monitoring of sediments for debris build-up underneath the PowerBuoys detects any accumulation of toxins that approach levels that could have an adverse effect on aquatic life, Licensee shall consult with the aquatic resources and water quality implementation committee on the need to evaluate water column and sediment concentrations of toxic pollutants from the biofouling paint.

8. General

(a) Implementation

Licensee shall, before construction of the Project, provide evidence to DEQ that Licensee has received all required approvals.

(b) §401 Certification Modification

DEQ, in accordance with OAR Chapter 340, Division 48 and, as applicable, 33 USC 1341, may modify this Certification to add, delete, or alter Certification conditions as necessary to address:

- (1) Adverse or potentially adverse project effects on water quality or designated beneficial uses that did not exist or were not reasonably apparent when this § 401 Certification was issued;
- (2) TMDLs (not specifically addressed above in these § 401 Certification Conditions);
- (3) Changes in water quality standards;
- (4) Any failure of these § 401 Certification Conditions to protect water quality or designated beneficial uses as expected when this § 401 Certification was issued; or
- (5) Any change in the Project or its operations that was not contemplated by this § 401 Certification that might adversely affect water quality or designated beneficial uses.

(c) Other Federal Permits

Upon applying for any federal license or permit authorizing a discharge to waters of the United States other than the new FERC license, Licensee shall provide DEQ written notice of such application and of any proposed changes or new activity requested to be authorized under the application since issuance of this § 401 Certification. DEQ will notify Licensee and the applicable federal agency either that: (1) this § 401 Certification is sufficient for purposes of the federal license or permit; or (2) in light of new information related to the water quality impacts of the activity requested to be authorized under the application, there is no longer reasonable assurance of compliance with state water quality standards. In the latter event, DEQ will consider the new information, solicit and consider public and agency comment as required by law, and issue a 401 certification determination for purposes of the federal license or permit.

(d) Project Modification

Licensee shall obtain DEQ review and approval before undertaking any change to the Project that might significantly affect water quality (other than project changes authorized by the new FERC license or required by or considered in this § 401 Certification), including changes to project structures and operations.

(e) Repair and Maintenance

Licensee shall obtain DEQ review and approval before undertaking project repair or maintenance activities that might significantly affect water quality (other than repair or maintenance activities authorized by the new FERC license required by or considered in this § 401 Certification). DEQ may, at Licensee's request, provide such prior approval effective prospectively for specified repair and maintenance activities.

(f) Inspection

Licensee shall allow DEQ access as necessary to inspect the project area and project records required by these § 401 Certification Conditions and to monitor compliance with these § 401 Certification Conditions, upon reasonable notice and subject to applicable safety and security procedures when engaged in such access.

(g) Posting

Licensee shall post or maintain a copy of these § 401 Certification Conditions at the Reedsport OPT Wave Park project office.

9. Project-Specific Fees

In accordance with ORS 543.080, Licensee shall pay a project-specific fee for DEQ's cost to oversee implementation of the conditions in this § 401 Certification. The fee shall be \$4000 annually (2011 dollars adjusted according to the formula below); made payable to "State of Oregon, Department of Environmental Quality" and due thirty days after the Licensee notifies US Army Corps of Engineers that Project construction will begin. DEQ must be copied on the notification to USACE. Payments will then be due on the second and third year anniversary of beginning of construction. DEQ and Licensee shall review the need, if any, to modify, extend, or terminate the fee, in accordance with ORS 543.080 during the third year following beginning of construction.

Adjusted payment formula:

$$AD = D \times (CPI-U)/(CPI-U-\text{August } 2007)$$

Where:

AD = Adjusted dollar amount payable to ODEQ.

D = Dollar amount prior to adjustment.

CPI-U = the most current published version of the Consumer Price Index-Urban. The CPI-U is published monthly by the Bureau of Labor Statistics of the federal Department of Labor. If that index ceases to be published, any reasonably equivalent index published by the Bureau of Economic Analysis may be substituted by written agreement between DEQ and Licensee.



Oregon

John A. Kitzhaber, MD, Governor

Department of Environmental Quality

Water Quality Division

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December 19, 2011

Robert F. Lurie
VP North American Business Development
Ocean Power Technologies
1590 Reed Road
Pennington, NJ 08534

Re: Errata Notice for § 401 certification for Reedsport OPT Wave Park, FERC No. 12713

Dear Mr. Lurie:

Please note an error in Section 7(a) of the "Clean Water Act § 401 Certification Conditions for the Reedsport OPT Wave Park (FERC No. 12713) Marine Waters off the Umpqua Basin Douglas County, Oregon" signed by ODEQ on December 2, 2011. The first sentence in Condition 7(a) should read "Licensee shall use only Ameron's ABC3 Antifouling paint."

Sincerely,

Marilyn Fonseca
Hydropower program coordinator



Reedsport OPT Wave Energy Park Aquatic Resources and Water Quality Committee

Agencies and organizations represented

- National Marine Fisheries Services
- US Fish and Wildlife Service
- US Department of Agriculture – Forest Service
- Oregon Department of Fish and Wildlife
- Oregon Parks and Recreation Department
- Oregon Department of Environmental Quality
- Oregon Water Resources Department
- Oregon Department of Land Conservation and Development
- Oregon Shores Conservation Coalition
- Surfrider Foundation
- Southern Oregon Ocean Resource Coalition